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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,484	10/15/2003	Kouji Fujita	031747	3494

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EXAMINER	
ELLIS, SUEZU Y	
ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

H·A

Office Action Summary	**Application No.** 10/684,484	**Applicant(s)** FUJITA, KOUJI	
	Examiner Suezu Ellis	**Art Unit** 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _28 July 2005_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-6_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _4_ is/are allowed.

6)☒ Claim(s) _1-3,5 and 6_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _28 July 2005_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 7-05) **Office Action Summary** Part of Paper No./Mail Date 20050923

FINAL REJECTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on July 28, 2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Brent (US 20010045512).

With respect to claim 1, Brent discloses a light curtain system of a container used for detecting the presence/absence of an object in a detection area where a light emitting are of a light emitting device and a light receiving area of a light receiving device are overlapped with each other (Fig. 5; [0058]; [0063]). Brent further discloses the height of the detection zone is adjustable (i.e. enlarging or reducing the light emitting area) by varying the emitted radiation intensity ([0016]; [[0057]). Note, it is well known that radiation intensity or brightness is directly correlated to the current. Also, a power supply unit is inherent to the system in order to provide power to the light emitting device and the power supply unit must output a current that is variable since the emitted radiation can be varied. Brent also discloses the inclusion of a control panel to adjust the LED brightness, thus it controls the power supply unit in order to change the magnitude of the current of the light emitting device (i.e. brightness) ([0057]). Note, the adjustment is provided by the user, however, applicant fails to claim that the adjustment is based on an output signal from the light receiving device.

With respect to claim 5, Brent discloses the light curtain system includes electrical circuitry for identifying when any output states (output level) of the detectors has an amplitude greater than a defined threshold level (reference value). When this event occurs, electrical control elements can adjust the maximum distance (i.e. height of the detection zone) by varying the set value of the threshold level ([0038]). Also, in the event of the output state having an amplitude greater than the threshold value, automatic doors of the container are opened indicating an object is present in the detection area ([0070]). Although Brent fails to expressly disclose comparing an output level of the light receiving device with a reference value to output the result of comparison as a detection signal, it is inherent that a comparison was performed in order to identify when the output state is greater than the threshold value.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milbrath et al. (US 6,166,371). Hereinafter, Milbrath et al. will be referred to as Milbrath.

With respect to claim 1, Milbrath discloses a light curtain system for detecting the absence/presence of an object in a detection area that comprises a controller that supplies voltage to a light emitting device (LED) and a potentiometer which adjusts (or changes) the voltage supplied by the controller (col. 5, lines 26, 29-31). Milbrath further discloses the supply voltage can be varied. The relationship between voltage and current is well known, thus changing the voltage is equivalent to changing the current. Milbrath further discloses that the height of the light emitted increases with the intensity of the emitted light from the LED, thus reducing or enlarging the light emitting area (col. 5, lines 19-21). Milbrath fails to expressly disclose the areas of light emitting and of light receiving devices being overlapping, however, Fig. 5 illustrates the height of the intensity of the area of emitted light. Since Milbrath discloses the height (17) of the emitted light can be adjusted, the height and width could increase with more intensity and thus overlap into the light receiving area of the light receiving device (24). Further, it would be obvious that the two regions overlap since an object is detected by the reflection by an object into the area of the receiving device.

With respect to claim 2, Milbrath discloses the control unit has the function of controlling the power supply unit to change the magnitude of the voltage (i.e. driving current) of the light emitting device. Milbrath further discloses when an object is detected, i.e. light has been reflected from the object to the detectors), the detectors send a signal to a breach identification circuitry wherein breach signals are sent to a controller which sends a signal to an intrusion alarm (col. 7, lines 3-17). Note, although Milbrath fails to identify whether the signal is digital or analog, it has to be one or other other. Further, although Milbrath discloses the potentiometer can be manually adjusted by a human operator, applicant fails to claim the function of controlling the power supply unit is based upon a signal from the detector.

Claims 3/1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brent.

With respect to claims 3/1 and 6, Brent fails to expressly disclose the photoelectric sensor is configured to have the function of repeatedly changing the magnitude of the driving current of the light emitting device or the reference value, in a predetermined pattern. It would have been an obvious to modify the system to change the magnitude of the driving current or the reference value, in a predetermined pattern in order to have the sensitivity to detect objects of desired minimum reflectivity and size while having the system automatically set the effective detection zone height ([0056]).

Claim 3/2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Milbrath in view of the teachings of Brent.

With respect to claim 3/2, Milbrath discloses the limitations of claims 1 and 2, however fails to expressly disclose the control unit is configured to have the function of repeatedly changing the magnitude of the driving current of the light emitting device in a predetermined pattern. Brent teaches it is well known that photodetectors receive sufficient light from objects with high reflectivity at greater distances than from objects with lower reflectivity. It would have been an obvious to modify the system of Milbrath in order to change the driving current in a predetermined pattern in order to have the sensitivity to detect objects of desired minimum reflectivity and size.

Allowable Subject Matter

Claim 4 is allowed.

With respect to claim 4, prior art fails to teach or reasonably suggest, a photoelectric sensor for detecting the presence/absence of an object in a detection area where a light emitting area of a light emitting device and a light receiving area of a light receiving device are overlapped with each other and the photoelectric sensor is configured to allow the light emitting device to emit light, compare an output level of the light receiving device with a plurality of reference values different from one another, and output the result of the comparison as a digital or an analog detection signal in order to detect the presence/absence of the object over a plurality of detection areas.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Telephone/Fax Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suezu Ellis whose telephone number is 571-272-2868. The examiner can normally be reached on 8:30am-5pm (Monday-Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephone B. Allen
Primary Examiner